

**Notice of Allowability**

Application No.	Applicant(s)
10/613,822	BENITSCH ET AL.
Examiner	Art Unit
Daniel Miller	1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to \_\_\_\_\_.
2.  The allowed claim(s) is/are 1-11 and 19.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None of the:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  
1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of  
Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 7/3/03+8/1/05
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date 12/12/05.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.



DEBORAH JONES

SUPERVISORY PATENT EXAMINER

**Examiner's Amendment**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Richard Beck on December 12, 2005.

The application has been amended as follows:

**IN THE CLAIMS**

In Claim 5, line 3, delete "layer in the outside" and insert --layer's outside surface--

In Claim 6, line 2, after the word "outside", insert --surface--.

Cancel non-elected claims 12-18 without prejudice.

***Election/Restrictions***

2. Restriction to one of the following inventions was required under 35 U.S.C. 121:
- I. Claims 1-11 and 19, drawn to a ceramic combustion chamber, classified in class 428, subclass 408.
  - II. Claims 12-18, drawn to a method of making a combustion chamber, classified in class 423, subclass 445R.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions Group I and Group II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different method. For instance, the product could be formed by adding carbon fibers to the CMC/polymer laminate already formed.

4. Because these inventions were distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated was proper. During a telephone conversation with Richard Beck on November 05, 2005 an election was made to prosecute the invention of Group I, claims 1-11 and 19.

5. In a later telephone interview on December 12, 2005, also with John Beck, agreement to an examiner's Amendment canceling the non-elected claims 12-18 was made (See Examiner's Amendment above).

***Allowable Subject Matter***

6. Claims 1-11 and 19 are allowed over the prior art of record.

***Reasons for Allowance***

7. The following is an examiner's statement of reasons for allowance:

The prior art of record alone or in combination fails to teach or suggest the claimed multilayer composite comprising an interior layer in contact with combustion gases and an outer layer, wherein the interior layer is a fiber-reinforced ceramic whose

matrix comprises phases of carbon and/or phases of silicon carbide and the outer layer is a polymer reinforced with carbon fibers.

U.S. Patent U.S. 6,151,887 (Haidn et al.) and U.S. 6,182,442B1 (Schmidt et al.) were found to be the closest prior art of record.

Haidn discloses a combustion chamber having an inner and outer shell (column 18 line 32-40). The interior layer is a fiber reinforced ceramic matrix comprising carbon and phases of silicon carbide (column 11, line 5-20). The outer layer is a pyrolyzed silicon carbide ceramic matrix. Haidn fails to disclose or suggest that the outer layer is a polymer layer reinforced with carbon fibers

Schmidt discloses a combustion chamber comprising two layers (column 3 line 61-68). The outer jacket comprises an anisotropic (column 4, line 63-66) long fibered C/Si composite material while the inner wall member comprises a short fibered C/SiC composite material (column 4, line 16-23). The reference does not teach or suggest an outer layer comprising a polymer reinforced with carbon fibers.

Any comment considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571)272-1534. The examiner can normally be reached on M-F 10 am to 7:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571)272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Miller



DEBORAH JONES  
SUPERVISORY PATENT EXAMINER